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(54) **SIMPLIFYING A POLYGON**

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(52) **U.S. Cl.**
USPC **345/441**; 345/442; 345/443; 345/472; 345/472.1

(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

Processes, machines, and computer-readable media are provided for expanding and simplifying a polygon or reducing and simplifying a polygon. Polygon expanding or reducing logic receives information that represents a polygon having a set of vertices. The polygon expanding or reducing logic determines another polygon having another set of vertices, such that the other polygon encompasses or is encompassed by the polygon, by determining, for each vertex of the set of vertices, a new set of vertices that are derived from the vertex and are at least a particular distance outside or inside the polygon. The vertex reducing logic determines whether an intermediate vertex is within the particular distance of a proposed segment between two other vertices of the other set of vertices, even though the intermediate vertex is not on the proposed segment, and, if so, removing the intermediate vertex from the other set of vertices.

30 Claims, 8 Drawing Sheets